

IN THE CLAIMS:

1. (currently amended) A method for producing a blank for a component of laser active quartz glass, said method comprising:
  - a) providing a dispersion with a solids content of at least 40% by wt. which contains SiO<sub>2</sub> nanopowder and dopants, including a cation of one or more rare earth metals or transition metals in a liquid,
  - b) granulation by moving the dispersion with withdrawal of moisture until a doped SiO<sub>2</sub> granulate of spherical porous granulate grains having a moisture content of less than 35% by wt. and a density of at least 0.95 g/cm<sup>3</sup> is formed,
  - c) drying and purifying the SiO<sub>2</sub> granulate by heating said SiO<sub>2</sub> granulate to a temperature of at least 1000°C so as to form doped porous SiO<sub>2</sub> granules having an OH content of less than 10 ppm, and
  - d) sintering ~~or melting~~ the doped SiO<sub>2</sub> granules in a reducing atmosphere so as to form the blank of doped quartz glass, wherein said sintering includes a gas pressure sintering, which comprises the following steps:
    - aa) heating the SiO<sub>2</sub> granules to a melting temperature of at least 1600°C while applying and maintaining a negative pressure;
    - bb) holding the SiO<sub>2</sub> granules at the melting temperature at an overpressure ranging from 5 bar to 15 bar for a melting period of at least 30 min so as to form the quartz glass blank;

cc) cooling the quartz glass blank while maintaining said overpressure.

2. (previously presented) The method according to claim 1, wherein an initial solids content of at least 50% by wt. is set in the dispersion.
3. (previously presented) The method according to claim 1, wherein the SiO<sub>2</sub> granulate obtained according to step b) has a BET surface area ranging from 40 m<sup>2</sup>/g to 70 m<sup>2</sup>/g.
4. (previously presented) The method according to claim 3, wherein the SiO<sub>2</sub> granulate obtained according to step b) has a BET surface area of at least 50 m<sup>2</sup>/g.
5. (previously presented) The method according to claim 1, wherein the spherical porous granulate grains have a grain size of less than 500 μm.
6. (previously presented) The method according to claim 1, wherein the SiO<sub>2</sub> granulate is dried and purified in a chlorine-containing atmosphere.
7. (previously presented) The method according to claim 1, wherein the SiO<sub>2</sub> granulate is dried and purified at a temperature of at least 1050°C.

8. (previously presented) The method according to claim 1, wherein the drying and purifying of the porous granulate is performed in an oxygen-containing atmosphere.
9. (previously presented) The method according to claim 1, wherein the porous SiO<sub>2</sub> granules obtained according to step c) have an OH content of less than one ppm.
10. (previously presented) The method according to claim 1, wherein the porous SiO<sub>2</sub> granules obtained according to step c) have a BET surface area of less than 20 m<sup>2</sup>/g.
11. (previously presented) The method according to claim 1, wherein the SiO<sub>2</sub> granules are thermally densified prior to step d).
12. (previously presented) The method according to claim 1, wherein the quartz glass blank is annealed at a temperature of at least 1120°C for a retention period of at least 40 hours.
13. (previously presented) The method according to claim 1, wherein the SiO<sub>2</sub> granules according to step d) are molten in a mold.
14. (previously presented) The method according to claim 1, wherein the SiO<sub>2</sub> blank according to step d) is three-dimensionally homogenized.

15. (previously presented) The method according to claim 1, wherein a bulk body with a radially inhomogeneous refractive index distribution is formed from SiO<sub>2</sub> granules of different refractive index, and the bulk body is sintered or molten to obtain the SiO<sub>2</sub> blank.
16. (currently amended) A method of transmitting laser light, said method comprising:  
producing a blank for a component of laser active quartz glass, said producing comprising:
- a) providing a dispersion with a solids content of at least 40% by wt. which contains SiO<sub>2</sub> nanopowder and dopants, including a cation of one or more rare earth metals or transition metals in a liquid,
  - b) granulation by moving the dispersion with withdrawal of moisture until a doped SiO<sub>2</sub> granulate of spherical porous granulate grains having a moisture content of less than 35% by wt. and a density of at least 0.95 g/cm<sup>3</sup> is formed,
  - c) drying and purifying the SiO<sub>2</sub> granulate by heating said SiO<sub>2</sub> granulate to a temperature of at least 1000°C so as to form doped porous SiO<sub>2</sub> granules having an OH content of less than 10 ppm, and
  - d) sintering ~~or melting~~ the doped SiO<sub>2</sub> granules in a reducing atmosphere so as to form the blank of doped quartz glass, wherein said sintering includes a gas pressure sintering, which comprises the following steps:

- aa) heating the  $\text{SiO}_2$  granules to a melting temperature of at least  $1600^\circ\text{C}$  while applying and maintaining a negative pressure;
  - bb) holding the  $\text{SiO}_2$  granules at the melting temperature at an overpressure ranging from 5 bar to 15 bar for a melting period of at least 30 min so as to form the quartz glass blank;
  - cc) cooling the quartz glass blank while maintaining said overpressure;
- and incorporating said  $\text{SiO}_2$  blank into a core material for a fiber and transmitting said laser light through said fiber.

17. (currently amended) A method of transmitting laser light, said method comprising:

producing a blank for a component of laser active quartz glass, said producing comprising:

- a) providing a dispersion with a solids content of at least 40% by wt. which contains  $\text{SiO}_2$  nanopowder and dopants, including a cation of one or more rare earth metals or transition metals in a liquid,
- b) granulation by moving the dispersion with withdrawal of moisture until a doped  $\text{SiO}_2$  granulate of spherical porous granulate grains having a moisture content of less than 35% by wt. and a density of at least  $0.95 \text{ g/cm}^3$  is formed,
- c) drying and purifying the  $\text{SiO}_2$  granulate by heating said  $\text{SiO}_2$  granulate to a temperature of at least  $1000^\circ\text{C}$  so as to form doped porous  $\text{SiO}_2$  granules having an OH content of less than 10 ppm, and

d) sintering ~~or melting~~ the doped SiO<sub>2</sub> granules in a reducing atmosphere so as to form the blank of doped quartz glass, wherein said sintering includes a gas pressure sintering, which comprises the following steps:

- aa) heating the SiO<sub>2</sub> granules to a melting temperature of at least 1600°C while applying and maintaining a negative pressure;
- bb) holding the SiO<sub>2</sub> granules at the melting temperature at an overpressure ranging from 5 bar to 15 bar for a melting period of at least 30 min so as to form the quartz glass blank;
- cc) cooling the quartz glass blank while maintaining said overpressure; and

incorporating said ~~SiO<sub>2</sub>~~ blank into an optical filter; and transmitting said laser light through said optical filter.

18. (currently amended) A method of transmitting laser light, said method comprising:  
producing a blank for a component of laser active quartz glass, said producing comprising:

- a) providing a dispersion with a solids content of at least 40% by wt. which contains SiO<sub>2</sub> nanopowder and dopants, including a cation of one or more rare earth metals or transition metals in a liquid,
- b) granulation by moving the dispersion with withdrawal of moisture until a doped SiO<sub>2</sub> granulate of spherical porous granulate grains having a moisture content of less than 35% by wt. and a density of at least 0.95 g/cm<sup>3</sup> is formed,

- c) drying and purifying the  $\text{SiO}_2$  granulate by heating said  $\text{SiO}_2$  granulate to a temperature of at least  $1000^\circ\text{C}$  so as to form doped porous  $\text{SiO}_2$  granules having an OH content of less than 10 ppm, and
- d) sintering ~~or melting~~ the doped  $\text{SiO}_2$  granules in a reducing atmosphere so as to form the blank of doped quartz glass, wherein said sintering includes a gas pressure sintering, which comprises the following steps:
- aa) heating the  $\text{SiO}_2$  granules to a melting temperature of at least  $1600^\circ\text{C}$  while applying and maintaining a negative pressure;
  - bb) holding the  $\text{SiO}_2$  granules at the melting temperature at an overpressure ranging from 5 bar to 15 bar for a melting period of at least 30 min so as to form the quartz glass blank;
  - cc) cooling the quartz glass blank while maintaining said overpressure; and
- incorporating said  ~~$\text{SiO}_2$~~  blank into a cladding tube for a fiber; and transmitting said laser light through said fiber.